

RESPONSE TO OFFICE ACTION MAILED 11/08/2005
"Method for Repairing Defects in Metallic Substrate Using Welding"
Serial No. 10/772,701
Examiner: Kevin P. Kerns
Atty. Docket No. 020627.035
Page 3 of 26

SPECIFICATION AMENDMENTS

Please replace the ABSTRACT with the following amended ABSTRACT:

A method for repairing defects in a metallic substrate including ~~comprising~~ the steps of
5 placing a consumable filler slug in contact with the substrate in the vicinity of the defect;
bringing a first electrode and a second electrode in contact with the consumable slug and
applying a pressure to the consumable slug; and transmitting electrical current between
the electrodes for a period, thereby resistively heating the consumable slug and the
metallic substrate resulting in coalescence in a substantially liquid pool that fills the
10 defect. The pool is then cooled to solidification under the pressure of the electrodes. The
electrodes are then removed from contact with the consumable slug and excess material
may be removed. The consumable slug may be formed as a single unit or multiple
sections, and may incorporate sacrificial retainers to add additional defect filling material,
retain the pool, and seal the pool from atmosphere.

Please replace paragraph [0054] of the published application with the following paragraph:

After obtaining the desired predetermined level of cooling, the first electrode 410 and the
second electrode 420 are removed from contact with the consumable filler slug 300 and
the repair is complete, as seen in FIG. 12. Alternative embodiments may include
20 additional steps such as a step of removing excess consumable filler slug 300 material
with a material processing device 800, such as a grinder, so that the surface 710 of the
repaired defect 700 is substantially consistent with the level of the adjoining substrate

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100 surface, illustrated in FIG. 13. Removal of excess consumable filler slug 300 material is often desired as it may serve as an indicator that the entire defect 200 has been repaired.

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